

SACRAMENTO REGIONAL FIRE PREVENTION OFFICERS ASSOCIATION

County Board of Supervisors

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A HANDY GUIDE TO DWELLING CONSTRUCTION REQUIREMENTS

**Includes Regional Fire Prevention Officers
Association Standard
for Residential Sprinklers
Effective July 1, 2001
Revised August 1, 2005**

A. Fire District Certificate of Release:

A “Fire District Certificate of Release” is required before a building permit can be issued for the following structures:

New construction of single family dwellings, duplexes, and modular homes that:

- Exceed 3,599 square feet in fire area, or
- Are constructed where no public water is available (domestic water supplied from a well), or
- Have the furthest point of the habitable structure more than 150 feet from a public paved road, ~~or~~

Existing structures that undergo an alteration or addition that results in an increase in area of 50 percent or more, and the final total area is over 3,599 square feet.

Note: Mobile homes and manufactured housing of any size require fire district permit release.

B. Fire Flow:

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into or within the jurisdiction. (see chart below.)

When any portion of the facility or building protected is in excess of 150 feet from a water supply on a public street, as measured by an

6. Install a minimum of one upright residential sprinkler at the highest portion of each attic space as a pilot head for heat detection.

Materials:

1. Pipe hangers shall be listed for the type of pipe being utilized. Screws are the only acceptable fastening method. A hanger shall be placed within 6 inches of each fire sprinkler.
2. A minimum of three spare sprinklers of each type shall be provided at a location near the main riser.
3. A minimum of 1-inch Schedule 40 PVC or copper pipe shall be used for the underground water supply line. Any transition from the plastic to ferrous piping shall be with listed fittings.

Testing:

1. All systems shall be pressure tested while visible for inspection at a pressure of 150 psi for a minimum duration of 30 minutes.
2. The alarm device(s) shall be tested prior to occupancy.

- When the water supply is used for domestic and irrigation needs, calculations indicating sufficient water for the fire sprinkler in addition to other uses shall be provided. In lieu of this, a water flow actuated solenoid valve to shut off the domestic and irrigation water usage may be required.

Design:

- The system shall provide at least the flow required to produce a minimum discharge density of 0.05 gpm/ft² to the design sprinklers.
- Open, attached porches do not require sprinkler protection unless there is a covering attaching a remote garage.
- A fire sprinkler shall be installed in all fuel fired water heater closets
- Rooms with vanities or sink areas separate from the toilet/bathing area shall be provided with sprinkler protection
- Detached garages and other “out” buildings within 6 feet of residential structures shall be provided with fire sprinkler protection. Approved plastic pipe may be used in garages when quick response sprinklers are utilized.

approved route around the exterior of the facility or building, on-site fire hydrants and water mains capable of supplying the required fire flow shall be provided when required by the chief.

Fire Flow Requirements – Residential	
Fire Area (square feet)	Fire Flow (gallons per minute measured @ 20 psi)
0-3,600	1,000
3,601-4,800	1,750
4,801-6,200	2,000
6,201-7,700	2,250
7,701-9,400	2,500
9,401-11,300	2,750
11,301-13,400	3,000
Fire flow may be reduced by 50% when an approved residential fire sprinkler system is installed.	
Ref: California Fire Code, Div. III, Appendix A (Sacramento County Code 1135, Chapter 17)	

Exception:

Group R Division 3 Occupancies (single family, duplex, mobile homes, manufactured housing, or modular home) provided with an automatic fire sprinkler system approved by the adopted NFPA Standard in areas not provided with a public water supply.

Provide a letter from the water district stating they can provide the required fire flow. Contact your local water district for their fees regarding fire flows, along with the installation of any necessary fire hydrants and water mains.

C. Additions:

Additions to existing dwellings can create fire flow and access issues that are not normally covered unless the dwelling is considered “new”.

The need to evaluate an addition is triggered when the total square footage of the dwelling, including any attached garage, carport, or covered patio, is increased 50 percent or more and the final total area is over 3,600 square feet.

See Fire District Release section above for additional conditions that trigger the need to evaluate.

CONSULT YOUR FIRE PROTECTION DISTRICT EARLY IN THE PLANNING STAGE OF YOUR PROJECT.

The items that will be reviewed are: access, roofing, and fire flow. Many times, the existing access is not acceptable and will have to be improved per the Road Construction Requirements. By increasing the size of the dwelling, fire flow requirements change substantially. Additionally, when the dwelling is re-roofed or new roofing is installed, the roofing materials shall conform to County roofing requirements. The design of the fire sprinklers must be submitted to your local fire district and approved prior to the contractor installing the system. The local fire district will provide you with a Fire District Permit Release. In addition, the fire sprinkler system installation must be inspected and approved by the local fire district prior to Building Inspection performing the frame inspection. See page 1 for Fire District Permit Release section.

joints located behind them or are wholly noncombustible.

General:

1. Installation shall not begin until plans have been approved and all fees are paid. A complete fire district approved set of plans shall be kept at the job site at all times.
2. All hydraulic calculations shall be included with a minimum of a two head remote area calculation in accordance with the most current manufacture’s listing. Where the manufacture’s minimum design criteria differ for one head and multiple heads flowing, additional calculations shall be provided.
All hydraulic calculations shall be submitted on an approved form to aid in plan check services.

Water Supply:

1. An automatic water supply approved by the authority having jurisdiction shall be provided for each sprinkler system and shall be capable of sustain the required flow for a period of ten minutes.
2. Water supply feed to conform to NFPA 13-D, where the sprinkler system can only be shut off when domestic water is shut off. Domestic water can be shut off independent of fire sprinkler systems.

**Sacramento Regional Fire Prevention Officers
Association Standards**

Article No. 10 Section 1003 Standard No. 002
Title: Residential Sprinklers Date 6/29/92
Revised 8/01/05

Approved by unanimous vote of the members of the Sacramento Regional Fire Prevention Officers Association at the meeting held on November 10, 2005

Scope:

This Standard is pursuant to CFC Article 10, Section 1003, for the design and the installation of residential fire sprinklers in one and two family dwelling unit structures. The design and installation shall meet the currently adopted edition of NFPA standard 13-D and the following clarifications and requirements:

Definitions:

1. Entrance Foyer: An entrance enclosure located outside of a residential structure exterior wall.
2. Irrigation System: Water supply systems used for the irrigation of property such as vineyards, orchards, and lawns and gardens in excess of 1-acre.
3. Noncombustible Fixtures: Fixtures in bathrooms that have a minimum of one-half inch thick gypsum wallboard with taped

Helpful Hint:

It is strongly recommended that applicants have the designs of their fire sprinkler system and house plumbing coordinated with their pump and well contractor to ensure sufficient water capacity for all needs. The pump information (flow and pressure curves, depth of pump, etc.) must be submitted to the fire department for review prior to final acceptance of the sprinkler system.

D. Roofing Requirements:

As of May 1, 1994, *all buildings constructed in the County require a minimum Class C roofing system.* This is a requirement for new construction, additions, alterations to existing roofs, and for re-roofing. Typical examples of Class C Roofing systems are:

1. Approved pressure treated shakes/shingles applied per the manufacturer's listing.
2. Tile over solid sheathing.
3. Class C rated composition shingles over solid sheathing,
Approved and listed Class "C"
assembly.

E. Special Roofing Considerations:

To comply with Government Code Section 51175, etc., otherwise known as the Bates Bill, the Board of Supervisors enacted Ordinance No. 1057. This ordinance is effective January 1, 1997, and applies principally to structures near the American River Parkway. This ordinance requires a Class A rating,

as defined in the 2001 Edition of the California Building Code, for roof coverings of new structures or re-roofing of an existing structure when 50 percent of the total roof area is replaced within a one-year period.

The parcels that are affected are primarily located adjacent to the American River in the communities of Orangevale, Fair Oaks, and Carmichael.

Contact your local fire agency or the Building Inspection Division to determine whether or not your parcel is affected. The typical examples of Class A roofing systems are:

1. Tile over Solid Sheathing.
2. Class A rated composition shingles over solid sheathing
3. Approved and listed Class "A" assembly.

Repairs such as local patching to fix leaks is not considered a re-roof. If there are any questions about whether you are doing a repair or a re-roof, call the Building Permit office staff.

F. Liquefied Petroleum Gas:

Approval from the local fire district is required prior to installation when LPG is used as the fuel supply for heating, cooking, etc. when the tank is in excess of 125 gallons water capacity. This requires a separate permit and plan submittal to the Fire Department.

L. Questions/Information:

If you have any questions or need specific information on any of the above requirements, please call your local fire service representative.

Telephone numbers for the fire protection districts serving Sacramento County are:

Courtland Fire District	775-1210
Delta Fire Department	(707) 374-2233
Elk Grove Fire Department	405-7100
Galt Fire District	(209) 754-1001
Herald Fire District	(209) 748-2322
Isleton Fire District	777-7776
River Delta Fire District	777-8700
Sacramento City Fire Department	264-5260
Sacramento Metropolitan Fire District	942-3300
Walnut Grove Fire District	776-2151
Wilton Fire District	687-6920

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road serving the dwelling. The numbers also need to be externally or internally illuminated and must contrast with their background. If the address number cannot be seen from the private road, an additional address sign has to be posted at the entrance of the private driveway from the private road.

Dwelling distance from property line (feet)	Minimum height of numerals, inches
25 or less	2*
50 or less	4*
Over 50	6*
	*illuminated

J. Appeals:

Fire Apparatus Access and Fire Flow:

Sometimes, an applicant cannot comply with the exact letter of the above requirements. Questions as to the acceptability of existing private access roads or alternate means of providing adequate access to the dwelling should be directed to the Fire Marshal of the local fire protection district. Please note that all appeals need to be directed to the County's Planning Department and the local fire district.

K. Fees:

Contact the local fire district for their fee policies on reviewing residential fire sprinkler systems or alternate fire flow systems, inspecting the installed system, and checking for fire vehicle access.

G. Fire Vehicle Access:

Private access road construction that will be required by the Sacramento County Zoning Code (effective October 2, 1992) are:

Road Construction Requirements		
Type of Lot	One or Two Dwellings	More than Two Dwellings
Any residential Lot:		
Width, feet	16	20
Asphalt, Inches	2	2
Aggregate Base, inches	4	4
Agriculture-Residential Lots (AR10 or less):		
Width, feet	16	20
Aggregate Base, inches	4 or equiv.	4 or equiv.
Agricultural Lots:	Improvements will be determined on a case by case basis by the fire protection district. Consult the appropriate fire protection district for their specific requirements.	

The above requirements apply to both the private access road and the driveway. The driveway must extend to the garage.

In addition, dead-end private access roads longer than 150 feet must provide a turnaround for fire service vehicles. Contact the local fire district for their requirements.

Helpful Hint:

For a longer lasting road, it is suggested that 6 inches to 8 inches of “pit run” be used as a temporary road during construction, then finished off with 4 inches of aggregate base prior to final.

New dwellings or additions as described under the Fire Flow section served by a private access road require approval from your local fire protection district for the fire vehicle access prior to Building Inspection issuing the building permit. The local fire district will provide you with a Fire District Permit Release. In addition to fire vehicle access needs, there may be conditions of approval associated with the parcel map that pertain to road construction. Inquire at the County Surveyor’s public counter (Street Improvement window), and ask staff to check the street improvement requirements on the map.

If the new dwelling or addition is at the end of, or along a private access road with several existing houses and the existing road does not meet the above requirements, the road to your dwelling must be upgraded to provide adequate access. It is recommended that you review your proposed plans with the Planning Department and the appropriate local fire district before making any financial commitment.

H. Private Driveways:

A private driveway runs from the public or private road to the dwelling. Private driveway construction requirements are the same as those for private roads serving two or less dwellings. As a minimum, it must extend to the garage. When the furthest point of the new dwelling is more than 150 feet from the road or driveway, your local fire protection district must also approve the driveway before the building permit can be issued.

I. Road Signs and House Numbers:

To facilitate location in an emergency and avoid delays in response, all roads and the dwellings served by them must be designated by name and/or number on the sign. These signs must be clearly visible from the main traveled roadway. Every dwelling needs an approved marker located with respect to the nearest public highway, street, or road servicing it. This marker must be clearly visible at all times to an approaching vehicle for a distance of not less than 100 feet. Normally, the approved marker shall be a metal sign on a metal post or other acceptable noncombustible support. As a minimum, it may be a metal sign on a 4” by 4” pressure treated wood post.

Helpful Hint:

Temporary road signs are acceptable during construction, although the permanent sign shall be installed prior to final.

Address numbers need to be installed on the dwelling. The numbers shall be in such a position to be plainly visible and legible from the private